

Newton Contributory Retirement System

**Actuarial Valuation and Review as of
January 1, 2014**





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June 20, 2014

*Retirement Board
Newton Contributory Retirement System
1000 Commonwealth Ave
Newton Centre, MA 02459-1449*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2014. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2015 and later years and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement System. The census information and financial information on which our calculations were based was prepared by the staff of the Newton Contributory Retirement System. That assistance is gratefully acknowledged.


The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: 

Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

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SECTION 1: Valuation Summary for the Newton Contributory Retirement System

Purpose

This report has been prepared by Segal Consulting to present a valuation of the Newton Contributory Retirement System as of January 1, 2014. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of M.G.L. Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2014;
- The assets of the Plan as of December 31, 2013;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

1. The actuarial valuation report as of January 1, 2014 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
2. The actuarial value of assets as of December 31, 2013 was \$279.9 million, or 99.8% of the market value of assets of \$280.3 million (as reported in the Annual Statement). As of December 31, 2012, the actuarial value of assets was 105.5% of market value. During the plan year ended December 31, 2013, the market value rate of return was 14.01%. Because the actuarial value of assets gradually recognizes market value fluctuations, the actuarial rate of return for the plan year ended December 31, 2013 was 7.81%.
3. As indicated in Section 2, Subsection B of this report, the total unrecognized investment gain as of December 31, 2013 was \$492,899. This investment gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment losses derived from future experience. This implies that earning the assumed rate of investment return on a market value basis will result in investment gains on the actuarial value of assets in the next few years.

SECTION 1: Valuation Summary for the Newton Contributory Retirement System

4. This valuation reflects the following changes in actuarial assumptions and method:
 - The investment return assumption was decreased from 7.75% to 7.65%.
 - The pre-retirement mortality assumption was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA.
 - The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA.
 - The mortality assumption for disabled participants was changed from the RP-2000 Mortality Table set forward three years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally using Scale AA.
 - The assumed percentage of deaths that are accidental was increased from 20% for all participants to 70% for Groups 1 and 2 and 90% for Group 4.
 - The assumed percentage of disabilities that are accidental was increased from 60% to 70% for Groups 1 and 2.
 - In the prior valuation, loads of 2% and 11.7% were added to the accidental disability liability for Group 1 and Group 4, respectively, to account for benefits payable to dependent children upon the member's disability. For this valuation, participants are assumed to have no dependent children.
 - The percentage of accidental disability retirees who are assumed to die from the same cause as their disability is 20% for Group 1 and 2 employees and 60% for Group 4 employees.
 - The liability for inactive vested participants is the greater of the employee's annuity savings fund or the present value of a deferred annuity.

The changes in assumptions increased the unfunded liability by \$8.2 million and increased the normal cost by \$627,000.
5. The unfunded liability was expected to increase from \$244.3 million as of January 1, 2013 to \$247.7 million as of January 1, 2014. The actual unfunded liability as of January 1, 2014 was \$271.3 million. The greater than expected increase was due to the changes in actuarial assumptions and method and a net experience loss.

SECTION 1: Valuation Summary for the Newton Contributory Retirement System

6. The contribution for fiscal 2015 is equal to the previously budgeted amount of \$19,972,859. The results of this valuation will first be reflected in the fiscal 2016 appropriation of \$21,670,552. The total payments for fiscal 2016 and later years are calculated to increase 8.5% per year and to fully fund the System by 2029. The Funding Schedule in Chart 15 of Section 2 shows the appropriation through fiscal 2029 based on this schedule.

The prior valuation fully funded the System by 2037 with amortization payments that increased 3.75% per year.

7. On a market value basis, the funded ratio has increased from 49.61% as of January 1, 2013 to 50.87% as of January 1, 2014. On an actuarial basis, the funded ratio has decreased from 52.32% as of January 1, 2013 to 50.78% as of January 1, 2014.
8. Section 4 includes the disclosure information required by Governmental Accounting Standards Board (GASB) Statements No. 25 and 27. Section 5 shows the format of the disclosure information required by GASB Statements No. 67 and 68. The exhibits in Section 5 will be completed at the end of the year when December 31, 2014 financial information is available. At that time, the liabilities will be projected to the end of the year and any required allocations will be determined.

SECTION 1: Valuation Summary for the Newton Contributory Retirement System

Summary of Key Valuation Results

	2014	2013
Contributions for fiscal year beginning July 1:		
Recommended for fiscal 2015 and 2014	\$19,972,859	\$18,363,516
Recommended for fiscal 2016 and 2015	21,760,552	19,972,859
Funding elements for plan year beginning January 1:		
Total normal cost	\$10,445,973	\$10,331,471
Market value of assets (MVA)	280,345,810	254,182,316
Actuarial value of assets (AVA)	279,852,911	268,087,455
Actuarial accrued liability	551,136,472	512,376,691
Unfunded actuarial accrued liability	271,283,561	244,289,236
Funded ratio based on market value of assets	50.87%	49.61%
Funded ratio based on actuarial value of assets	50.78%	52.32%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	1,327	1,318
Number of inactive participants entitled to a return of their employee contributions	514	547
Number of inactive participants with a vested right to a deferred or immediate benefit	28	- *
Number of active participants	1,666	1,616
Total payroll	\$84,488,457	\$82,970,316
Average payroll	50,713	51,343

Notes: 2013 results are based on the January 1, 2013 valuation report prepared by Buck Consultants, LLC.

The City appropriates an amount for administrative expenses, in addition to the recommended contributions shown above. Therefore, no expense assumption has been included.

* *Included with inactive participants entitled to a return of their employee contributions.*

SECTION 2: Valuation Results for the Newton Contributory Retirement System

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past four valuations can be seen in this chart.

CHART 1

Participant Population: 2010 – 2013

Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
2010	1,669	574	1,312	1.13
2011	1,610	561	1,319	1.17
2012	1,616	547	1,318	1.15
2013	1,666	542	1,327	1.12

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 1,666 active participants with an average age of 45.3, average years of service of 11.6 years and average payroll of \$50,713. The 1,616 active participants in the prior valuation had an average payroll of \$51,343.

Among the active participants, there were none with unknown age and/or service information.

Inactive Participants

In this year's valuation, there were 28 participants with a vested right to a deferred or immediate vested benefit and 514 participants entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2

Distribution of Active Participants by Age as of December 31, 2013

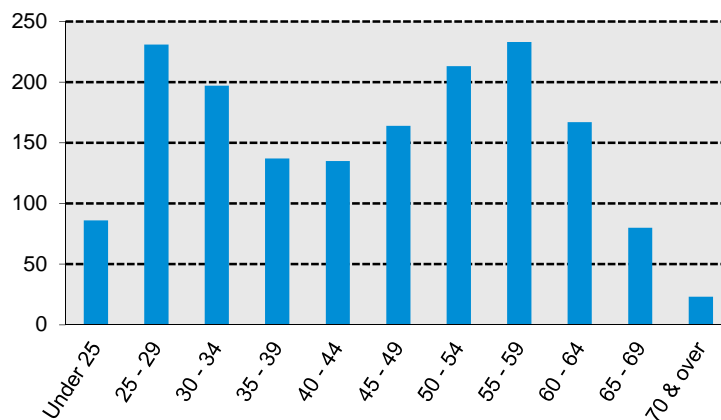
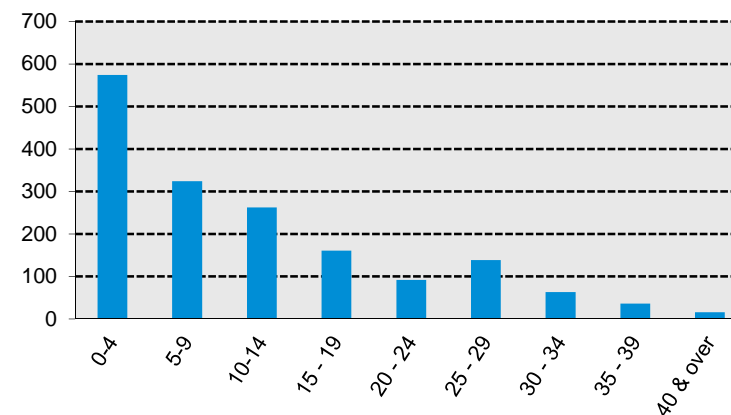


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2013



SECTION 2: Valuation Results for the Newton Contributory Retirement System

Retired Participants and Beneficiaries

As of December 31, 2013, 1,327 retired participants and beneficiaries were receiving total monthly benefits of \$2,850,833, excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 1,318 retired participants and beneficiaries receiving monthly benefits of \$2,823,681.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2013

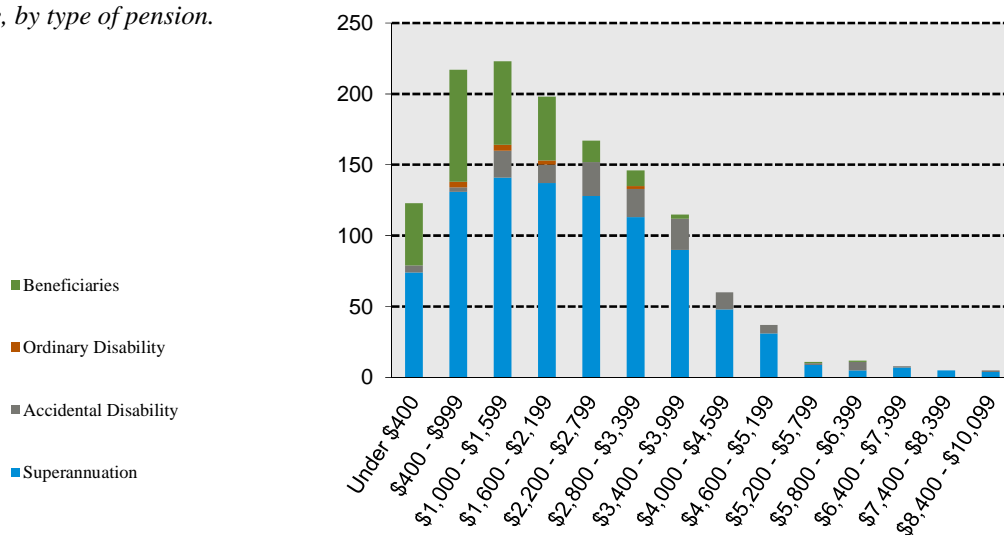
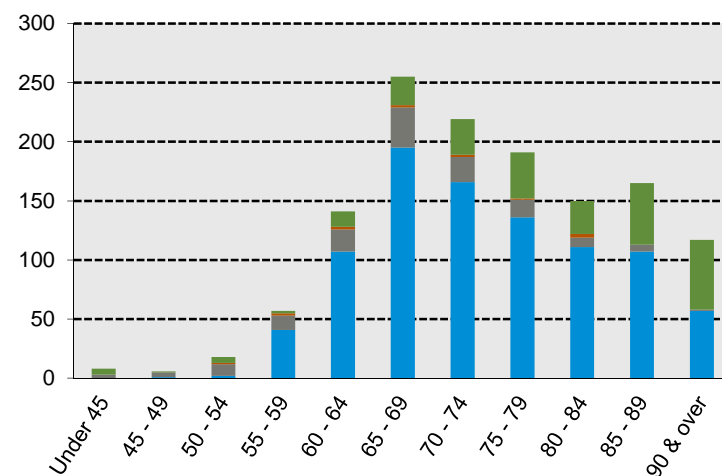


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2013



SECTION 2: Valuation Results for the Newton Contributory Retirement System

B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

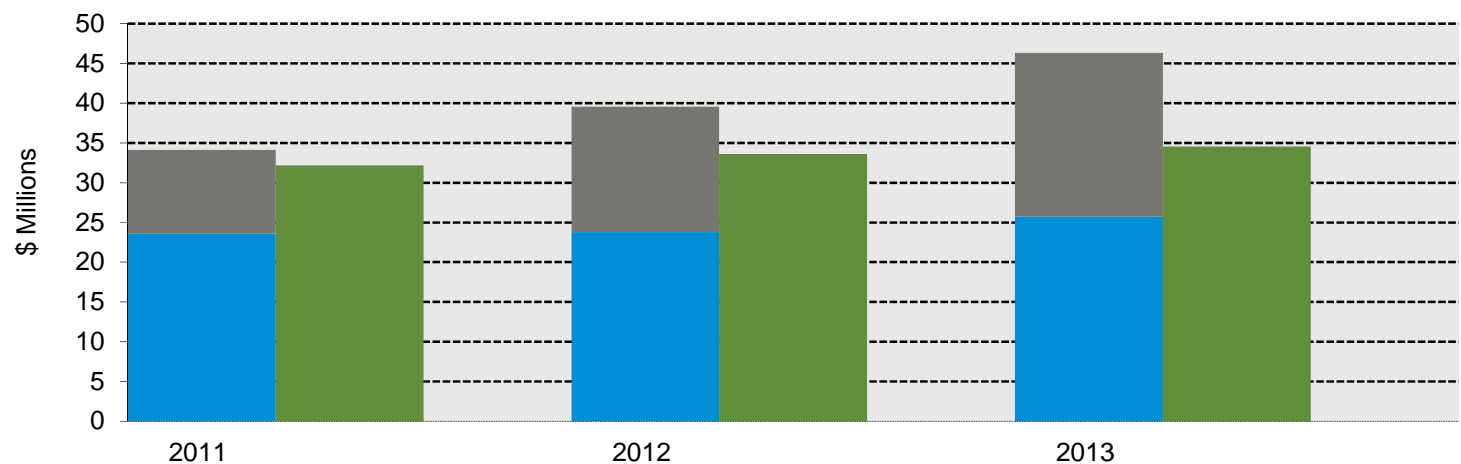
Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

The chart depicts the components of changes in the actuarial value of assets over the last two years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

- Benefits paid
- Net investment income
- Net contributions

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 2012 – 2013



SECTION 2: Valuation Results for the Newton Contributory Retirement System

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets for Year Ended December 31, 2013

1. Actuarial value of assets as of December 31, 2012	\$268,087,455
2. Contributions, less benefit payments	-8,833,330
3. Expected investment income on (1) and (2)	20,434,486
4. Preliminary actuarial value of assets: (1) + (2) + (3)	279,688,611
5. Market value of assets, December 31, 2013	280,345,810
6. Adjustment toward market value: 25% of [(5) - (4)]	164,300
7. Adjustment to be within 20% corridor	0
8. Final actuarial value of assets as of December 31, 2013: (4) + (6) + (7)	<u>\$279,852,911</u>
9. Actuarial value as a percentage of market value: (8) ÷ (5)	99.8%
10. Amount deferred for future recognition: (5) - (8)	\$492,899

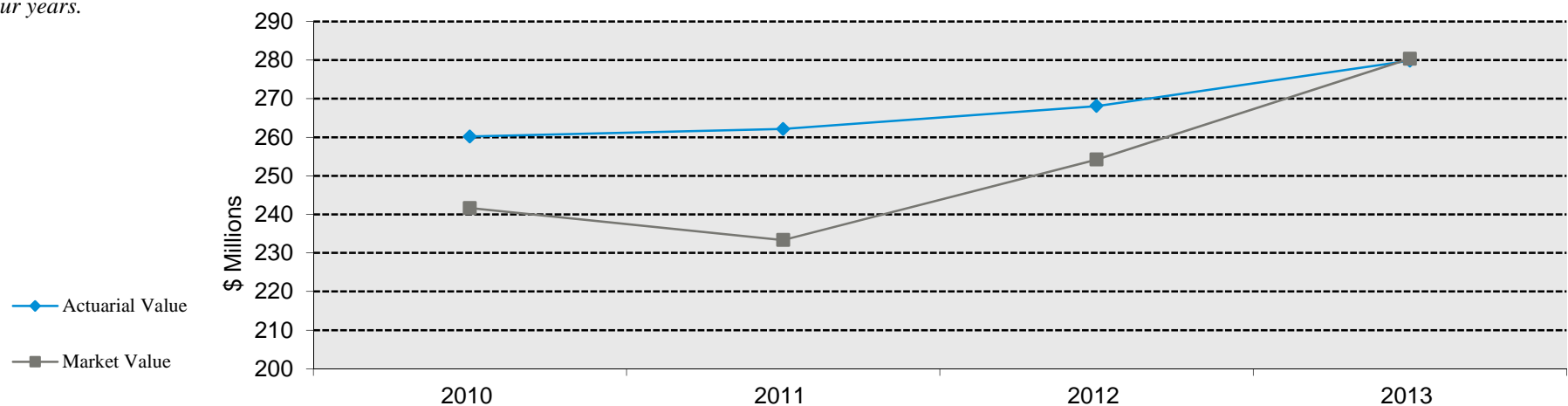
SECTION 2: Valuation Results for the Newton Contributory Retirement System

Both the actuarial value and market value of assets are representations of the Newton Contributory Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Newton Contributory Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past four years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2010 – 2013



SECTION 2: Valuation Results for the Newton Contributory Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The net experience loss is \$15,412,827. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9

Actuarial Experience for Year Ended December 31, 2013

1. Net gain from investments*	\$164,300
2. Net loss from other experience	<u>-15,577,127</u>
3. Net experience loss: (1) + (2)	<u>-\$15,412,827</u>

* Details in Chart 10

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Newton's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets was 7.75%. The actual rate of return on an actuarial basis for the 2013 plan year was 7.81%.

Since the actual return for the year was greater than the assumed return, the Newton Contributory Retirement System experienced an actuarial gain during the year ended December 31, 2013 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10

Actuarial Value Investment Experience for Year Ended December 31, 2013

1. Actual return	\$20,598,786
2. Average value of assets	263,670,790
3. Actual rate of return: (1) ÷ (2)	7.81%
4. Assumed rate of return	7.75%
5. Expected return: (2) x (4)	\$20,434,486
6. Actuarial gain/(loss): (1) – (5)	<u>\$164,300</u>

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last three years.

Based upon this experience and future expectations, we have lowered the assumed rate of return from 7.75% to 7.65%.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2011 - 2013

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2011	N/A	4.00%	N/A	0.01%
2012	N/A	5.95%	N/A	13.20%
2013	<u>\$20,598,786</u>	7.81%	<u>\$34,996,825</u>	14.01%
Total	\$20,598,786		\$34,996,825	

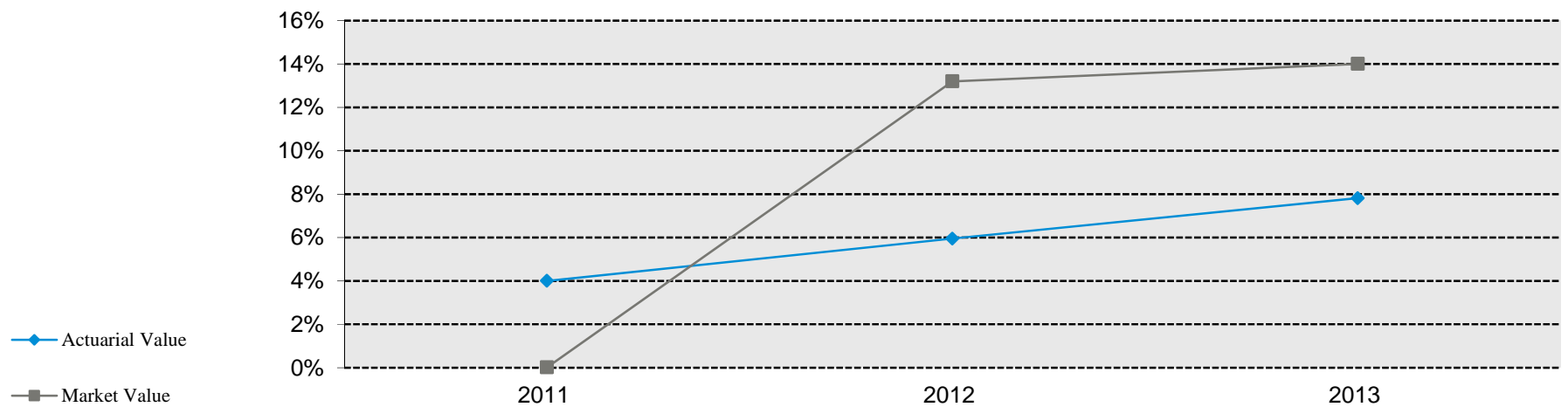
SECTION 2: Valuation Results for the Newton Contributory Retirement System

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2011 - 2013.

CHART 12

Market and Actuarial Rates of Return for Years Ended December 31, 2011 - 2013



SECTION 2: Valuation Results for the Newton Contributory Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended December 31, 2013 amounted to \$15,577,127, which is 2.8% of the actuarial accrued liability.

This valuation reflects the following changes in actuarial assumptions and method:

- The investment return assumption was decreased from 7.75% to 7.65%.
- The pre-retirement mortality assumption was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA.

- The mortality assumption for disabled participants was changed from the RP-2000 Mortality Table set forward three years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally using Scale AA.
- The assumed percentage of deaths that are accidental was increased from 20% for all participants to 70% for Groups 1 and 2 and 90% for Group 4.
- The assumed percentage of disabilities that are accidental was increased from 60% to 70% for Groups 1 and 2.
- In the prior valuation, loads of 2% and 11.7% were added to the accidental disability liability for Group 1 and Group 4, respectively, to account for benefits payable to dependent children upon the member's disability. For this valuation, participants are assumed to have no dependent children.
- The percentage of accidental disability retirees who are assumed to die from the same cause as their disability is 20% for Group 1 and 2 employees and 60% for Group 4 employees.
- The liability for inactive vested participants is the greater of the employee's annuity savings fund or the present value of a deferred annuity.

The changes in assumptions increased the unfunded liability by \$8.2 million and increased the normal cost by \$627,000.

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Chart 13 below provides a reconciliation of the unfunded liability from the prior valuation to the current valuation.

CHART 13

Development of Unfunded Actuarial Accrued Liability and (Gain)/Loss

1. Unfunded actuarial accrued liability at beginning of year		\$244,289,236
2. Normal cost at beginning of year		10,331,471
3. Total contributions		-25,716,935
4. Interest		
(a) For whole year on (1) + (2)	\$19,733,105	
(b) For half year on (3)	<u>-959,133</u>	
(c) Total interest		<u>18,773,972</u>
5. Expected unfunded actuarial accrued liability		\$247,677,744
6. Changes due to:		
(a) Investment gain	-\$164,300	
(b) Experience loss	15,577,127	
(c) Assumption changes	<u>8,192,990</u>	
(d) Total changes		<u>23,605,817</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$271,283,561</u>

SECTION 2: Valuation Results for the Newton Contributory Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The prior valuation fully funded the System by 2037 with amortization payments that increased 3.75% per year.

The contribution for fiscal 2015 is equal to the previously budgeted amount of \$19,972,859. The results of this valuation will first be reflected in the fiscal 2016 appropriation. The total payments for fiscal 2016 and later years are calculated to increase by 8.50% per year, and to fully fund the System by 2029. Chart 15 shows the appropriation through fiscal 2029 based on this schedule.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 14
Recommended Contribution

	Year Beginning January 1			
	2014		2013	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$10,445,973	12.03%	\$10,331,471	12.15%
2. Expected employee contributions	<u>-8,178,103</u>	<u>-9.42%</u>	<u>-7,099,229</u>	<u>-8.35%</u>
3. Employer normal cost: (1) + (2)	\$2,267,870	2.61%	\$3,232,242	3.80%
4. Actuarial accrued liability	551,136,472		512,376,691	
5. Actuarial value of assets	<u>279,852,911</u>		<u>268,087,455</u>	
6. Unfunded actuarial accrued liability: (4) - (5)	\$271,283,561		\$244,289,236	
7. Employer normal cost projected to July 1, 2014 and 2013, adjusted for timing	2,304,550	2.63%	3,376,089	3.93%
8. Projected unfunded actuarial accrued liability	281,468,951		253,578,817	
9. Payment on projected unfunded actuarial accrued liability, adjusted for timing	17,668,309	20.15%	14,987,427	17.45%
10. Recommended contribution: (7) + (9)	<u>\$19,972,859</u>	<u>22.78%</u>	<u>\$18,363,516</u>	<u>21.38%</u>
11. Projected payroll	\$87,671,327		\$85,890,809	

Notes: Recommended contributions are assumed to be paid August 1.

Recommended contributions are set equal to the budgeted amounts determined with the prior valuation.

The City appropriates an amount for administrative expenses, in addition to the recommended contributions shown above. Therefore, no expense assumption has been included.

SECTION 2: Valuation Results for the Newton Contributory Retirement System

CHART 15

Funding Schedule – Fully funded by 2029 with appropriation increasing 8.50% per year

(1) Fiscal Year Ended June 30	(2) Normal Cost	(3) Amortization of Unfunded Actuarial Accrued Liability	(4) Total Appropriation: (2) + (3)	(5) Unfunded Actuarial Accrued Liability at Beginning of Fiscal Year	(6) % Increase Over Prior Year's Appropriation
2015	\$2,304,550	\$17,668,309	\$19,972,859	\$281,468,951	- -
2016	2,378,483	19,292,069	21,670,552	284,097,871	8.50%
2017	2,454,700	21,057,849	23,512,549	285,190,631	8.50%
2018	2,533,265	22,977,851	25,511,116	284,477,765	8.50%
2019	2,614,251	25,065,309	27,679,560	281,656,141	8.50%
2020	2,697,731	27,334,592	30,032,323	276,385,275	8.50%
2021	2,783,778	29,801,292	32,585,071	268,283,265	8.50%
2022	2,872,470	32,482,332	35,354,802	256,922,311	8.50%
2023	2,963,886	35,396,074	38,359,960	241,823,780	8.50%
2024	3,058,108	38,562,448	41,620,556	222,452,777	8.50%
2025	3,155,220	42,003,083	45,158,303	198,212,166	8.50%
2026	3,255,307	45,741,452	48,996,759	168,435,986	8.50%
2027	3,358,460	49,803,024	53,161,484	132,382,220	8.50%
2028	3,464,769	54,215,441	57,680,210	89,224,835	8.50%
2029	3,574,329	38,279,460	41,853,789	38,045,033	-27.44%
2030	3,687,236	-	3,687,236	-	-91.19%

Notes: Recommended contributions are assumed to be paid August 1.

Assumes item (2) increases at 2.0%, then 2.5%, thereafter per year, plus an additional increase for the impact of generational mortality.

Assumes contribution of budgeted amount for fiscal 2015.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT A

Table of Plan Coverage

	Year Ended December 31		Change From Prior Year
Category	2013	2012	
Active participants in valuation:			
Number	1,666	1,616	3.1%
Average age	45.3	N/A	N/A
Average years of service	11.6	N/A	N/A
Total payroll	\$84,488,457	\$82,970,316	1.8%
Average payroll	50,713	51,343	-1.2%
Member contributions	78,129,294	N/A	N/A
Inactive participants entitled to a return of their employee contributions	514	547	N/A
Inactive participants with a vested right to a deferred or immediate benefit	28	- - *	N/A
Retired participants:			
Number in pay status	923	1,162	N/A
Average age	74.0	75.3	N/A
Average monthly benefit	\$2,285	\$1,985	N/A
Disabled participants:			
Number in pay status	146	156	-6.4%
Average age	67.1	66.6	N/A
Average monthly benefit	\$2,878	\$3,312	N/A
Beneficiaries in pay status:			
Number in pay status	258	- - **	N/A
Average age	79.8	- - **	N/A
Average monthly benefit	\$1,246	- - **	N/A

* Included with inactive participants entitled to a return of their employee contributions.

** Included with retirees.

Note: Year end 2012 results are based on the January 1, 2013 valuation report prepared by Buck Consultants, LLC.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT B

Participants in Active Service as of December 31, 2013 By Age, Years of Service, and Average Payroll

Age	Years of Service									
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	86	86	--	--	--	--	--	--	--	--
	\$27,592	\$27,592	--	--	--	--	--	--	--	--
25 - 29	231	207	24	--	--	--	--	--	--	--
	\$35,899	\$35,167	\$42,211	--	--	--	--	--	--	--
30 - 34	197	94	84	18	1	--	--	--	--	--
	\$47,342	\$39,603	\$52,191	\$63,569	\$75,366	--	--	--	--	--
35 - 39	137	43	47	41	6	--	--	--	--	--
	\$52,581	\$34,666	\$58,822	\$61,791	\$69,155	--	--	--	--	--
40 - 44	135	34	27	44	29	1	--	--	--	--
	\$57,690	\$41,141	\$54,868	\$62,458	\$71,612	\$82,962	--	--	--	--
45 - 49	164	35	28	32	34	21	13	1	--	--
	\$54,709	\$38,376	\$46,596	\$55,759	\$63,959	\$69,201	\$64,892	\$68,784	--	--
50 - 54	213	39	36	35	28	17	45	12	1	--
	\$55,982	\$41,513	\$48,041	\$49,084	\$63,585	\$72,051	\$64,538	\$74,978	\$48,561	--
55 - 59	233	23	43	38	19	19	46	31	13	1
	\$60,201	\$42,834	\$48,486	\$48,035	\$61,270	\$63,434	\$65,600	\$85,435	\$78,785	\$71,732
60 - 64	167	9	23	42	26	18	16	13	17	3
	\$56,597	\$46,278	\$52,178	\$46,476	\$62,268	\$52,125	\$58,027	\$84,263	\$63,702	\$73,055
65 - 69	80	4	11	12	14	13	11	2	4	9
	\$50,944	\$32,966	\$43,718	\$48,318	\$50,602	\$42,982	\$70,242	\$42,976	\$44,704	\$64,259
70 & over	23	--	1	--	4	3	7	4	1	3
	\$45,839	--	\$16,486	--	\$59,607	\$39,859	\$36,502	\$41,742	\$96,697	\$53,540
Total	1,666	574	324	262	161	92	138	63	36	16
	\$50,713	\$36,168	\$50,801	\$54,524	\$63,677	\$60,684	\$63,203	\$78,815	\$67,534	\$64,365

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT C

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2013	Year Ended December 31, 2012
Net assets at actuarial value at the beginning of the year	\$268,087,455	\$262,109,152
Contribution income:		
Employer contributions	\$17,975,932	\$16,508,453
Employee contributions	7,421,492	6,951,141
Other contributions	<u>319,511</u>	<u>313,189</u>
Net contribution income	25,716,935	23,772,783
Net investment income	<u>20,598,786</u>	<u>15,799,687</u>
Total income available for benefits	\$46,315,721	\$39,572,470
Less benefit payments:		
Pensions	-\$33,837,596	-\$32,765,195
Net 3(8)(c) reimbursements	13,982	-28,832
Refunds, annuities, & Option B refunds	-726,651	-803,566
Workers Compensation Settlements	<u>0</u>	<u>3,426</u>
Net benefit payments	-\$34,550,265	-\$33,594,167
Change in reserve for future benefits	\$11,765,456	\$5,978,303
Net assets at actuarial value at the end of the year	\$279,852,911	\$268,087,455

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2013

Year Ended December 31	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return*	Benefit Payments	Actuarial Value of Assets at End of Year
2011	\$16,056,552	\$7,273,727	\$303,331	\$10,503,211	\$32,184,128	\$262,109,152
2012	16,508,453	6,951,141	313,189	15,799,687	33,594,167	268,087,455
2013	17,975,932	7,421,492	319,511	20,598,786	34,550,265	279,852,911

* Net of investment fees.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT E

Department Breakouts

Department Code	Category	Active participants in valuation	Total projected payroll	Fiscal Year Ending 2016		
				Normal Cost	Amortization of Actuarial Accrued Liability	Total Appropriation
001	M.I.S.	8	\$578,583	\$(2,782)	\$81,612	\$78,830
002	Personnel	5	303,045	2,001	104,253	106,254
003	Human Services	8	573,823	7,036	111,555	118,591
004	Financial Information Systems	2	172,889	3,575	30,355	33,930
005	Jackson Homestead	3	164,133	4,179	21,820	25,999
006	Executive	7	573,374	15,210	98,462	113,672
007	Comptrollers	5	390,799	(5,155)	139,187	134,032
008	Retirement	2	195,515	(3,734)	40,291	36,557
009	Assessing	13	1,048,501	3,829	223,631	227,460
010	Purchasing	5	315,358	15,053	79,617	94,670
011	Treasury	11	656,266	16,717	102,033	118,750
012	Law	11	963,783	13,487	192,898	206,385
013	City Clerk	7	394,464	2,413	47,674	50,087
014	Clerk of the Board	4	269,078	5,408	58,836	64,244
015	Board of Aldermen	19	187,206	15,889	44,303	60,192
016	Building	27	1,579,234	38,486	406,567	445,053
017	Elections	3	116,085	229	113,645	113,874
018	Planning	14	887,497	12,313	135,733	148,046
018F	Planning - Federally Funded	9	487,568	5,657	136,488	142,145
018P	Community Preservation Planning	1	87,484	6,678	3,853	10,531
019	Fire (Group 2 & 4)	177	12,826,558	796,429	4,128,700	4,925,129
019A	Fire (Civilian Personnel)	5	313,187	1,848	78,274	80,122
019S	Fire (Retired under Starck)	0	-	-	221,780	221,780
020	Police (Group 2 & 4)	137	10,975,716	638,458	3,828,511	4,466,969
020A	Police (Civilian Personnel)	37	2,134,917	(23,118)	227,725	204,607

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

Department Code	Category	Active participants in valuation	Total projected payroll	Fiscal Year Ending 2016		
				Normal Cost	Amortization of Actuarial Accrued Liability	Total Appropriation
021	Police School Traffic Sup.	15	487,780	20,809	163,607	184,416
022	Sealer Weights & Measures	1	72,363	3,233	7,394	10,627
023	Inspectional Services	13	893,689	27,193	209,929	237,122
025	Health	40	2,326,125	62,696	377,322	440,018
026	Veterans	1	89,497	1,903	48,922	50,825
027	Library	59	3,065,863	45,690	686,144	731,834
028	School Custodian	86	4,462,755	69,735	1,039,368	1,109,103
029	School Cafeteria	1	39,921	188	171,342	171,530
030	School Teacher Aides	573	18,099,325	260,357	1,175,624	1,435,981
031	School Clerical	108	6,958,139	130,073	1,364,720	1,494,793
031A	School Committee	0	-	-	2,994	2,994
031B	School Budget Revolving	2	108,667	4,436	15,997	20,433
031C	School - Community Schools	7	380,818	18,622	23,896	42,518
031S	Summer School Revolving	1	57,379	2,104	11,303	13,407
032	Recreation	30	1,914,434	12,497	614,164	626,661
032A	Recreation - Arts in the Parks	2	103,317	3,603	1,114	4,717
033	Engineering	11	851,240	18,168	239,629	257,797
034	DPW	117	6,364,804	106,375	1,601,473	1,707,848
034A	DPW-Storm Water Management	4	232,757	3,284	43,336	46,620
035	Water-Sewer (General Personnel)	12	742,833	3,257	137,489	140,746
035S	Sewer Personnel	20	1,001,211	6,919	222,939	229,858
035W	Water Personnel	24	1,195,330	5,455	260,755	266,210
036	Newton Housing Authority	19	1,164,239	1,780	214,805	216,585
TOTAL		1,666	\$86,807,549	\$2,378,483	\$19,292,069	\$21,670,552

Note: Department allocations are determined on an actuarial basis with assets allocated in proportion to the actuarial accrued liability.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT F

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or actuarial assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Withdrawal rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial accrued liability for actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial accrued liability for pensioners:

The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded actuarial accrued liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There are many approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

**Amortization of the unfunded
actuarial accrued liability:**

Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 258 beneficiaries in pay status)	1,327
2. Participants active during the year ended December 31, 2013 with total accumulated contributions of \$78,129,294 and projected 2014 payroll of \$86,807,549	1,666
3. Inactive participants with a right to a return of their employee contributions as of December 31, 2013	514
4. Inactive participants with a vested right to a deferred or immediate benefit as of December 31, 2013	28

The actuarial factors as of the January 1, 2014 valuation date are as follows:

1. Normal cost	\$10,445,973
2. Expected employee contributions	<u>-8,178,103</u>
3. Employer normal cost: (1) + (2)	\$2,267,870
4. Actuarial accrued liability	551,136,472
Retired participants and beneficiaries	\$318,525,511
Active participants	226,559,814
Inactive participants	6,051,147
5. Actuarial value of assets (\$280,345,810 at market value as reported in the Annual Statement)	279,852,911
6. Unfunded actuarial accrued liability	271,283,561

The actuarial factors projected to July 1, 2014 are as follows:

1. Employer normal cost, projected to July 1, 2014, adjusted for timing	\$2,304,550
2. Projected unfunded actuarial accrued liability	281,468,951
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	17,668,309
4. Recommended contribution: (1) + (3)	<u>\$19,972,859</u>
5. Projected payroll	87,671,327
6. Total budgeted contribution as a percentage of payroll: (4) ÷ (5)	22.78%

Notes: Recommended contributions are assumed to be paid August 1.

Recommended contributions are set equal to the budgeted amounts determined with the prior valuation.

The City appropriates an amount for administrative expenses, in addition to the recommended contributions shown above. Therefore, no expense assumption has been included.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT II

Supplementary Information Required by the GASB - History of Employer Contributions

Plan Year Ended December 31	Annual Required Contributions	Actual Contributions	Percentage Contributed
2012	\$16,795,277	\$16,821,642	100.16%
2013	18,363,516	18,363,516	100.00%

SECTION 4: Reporting Information for the Newton Contributory Retirement System**EXHIBIT III****Supplementary Information Required by the GASB - Schedule of Funding Progress**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
01/01/2005	\$244,266,000	\$361,080,000	\$116,814,000	67.65%	\$69,702,000	167.59%
01/01/2006	253,420,995	382,732,277	129,311,282	66.21%	71,278,135	181.42%
01/01/2007	265,700,539	402,257,645	136,557,106	66.05%	74,197,265	184.05%
01/01/2008	281,114,591	419,000,697	137,886,106	67.09%	79,205,738	174.09%
01/01/2009	252,116,922	443,009,607	190,892,685	56.91%	82,013,624	232.76%
01/01/2010	254,035,335	462,103,688	208,068,353	54.97%	83,843,673	248.16%
01/01/2011	260,156,459	473,083,813	212,927,354	54.99%	81,378,076	261.65%
01/01/2012	262,109,152	493,224,160	231,115,008	53.14%	80,337,091	287.68%
01/01/2013	268,087,455	512,376,691	244,289,236	52.32%	82,970,316	294.43%
01/01/2014	279,852,911	551,136,472	271,283,561	50.78%	86,807,549	312.51%

Note: Information prior to 2014 taken from the January 1, 2013 valuation report prepared by Buck Consultants, LLC.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT IV

Supplementary Information Required by the GASB

Valuation date	January 1, 2014
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Total payments increase at 8.50% per year
Remaining amortization period	15 years from July 1, 2014
Asset valuation method	Sum of actuarial value at beginning of the year, contributions and investment earnings based on the actuarial interest assumption less benefit payments plus 25% of the market value at the end of the year in excess of that sum, plus additional adjustment toward market value as necessary so that final actuarial value is within 20% of market value.

Actuarial assumptions:	
Investment rate of return	7.65% (previously, 7.75%)
Inflation rate	2.0% for 2014 and 2.5% for 2015 and later years
Projected salary increases	3.0% for 2014 and 3.5% for 2015 and later years
Cost of living adjustments	3% of first \$12,000

Plan membership:	
Retired participants and beneficiaries receiving benefits	1,327
Inactive participants entitled to a return of their employee contributions	514
Inactive participants with a vested right to a deferred or immediate benefit	28
Active participants	<u>1,666</u>
Total	3,535

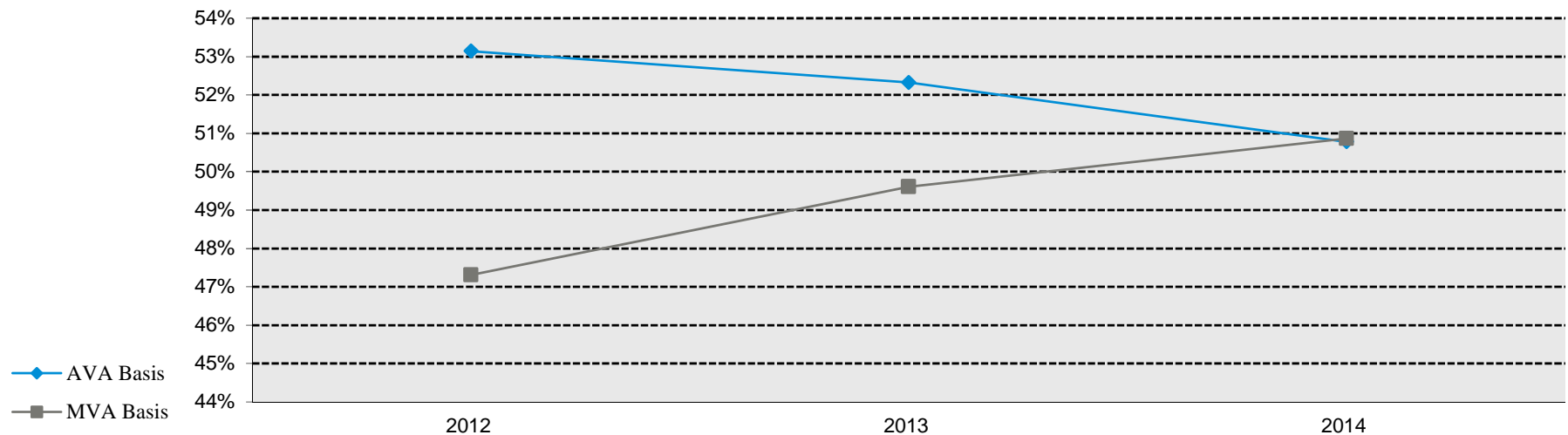
SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT V

Funded Ratio

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

The chart below depicts a history of the funded ratios for this plan. On a market value basis, the funded ratio has increased from 49.61% as of January 1, 2013 to 50.87% as of January 1, 2014. On an actuarial basis, the funded ratio has decreased from 52.32% as of January 1, 2013 to 50.78% as of January 1, 2014.



SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT VI

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table projected generationally with Scale AA (Previously, RP-2000 Mortality Table projected 23 years with Scale AA)
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA (Previously, RP-2000 Mortality Table projected 23 years with Scale AA)
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally with Scale AA (Previously, RP-2000 Mortality Table set forward three years)
The RP-2000 Employee Mortality Table and the RP-2000 Healthy Annuitant Mortality Table reasonably reflect the mortality of the Plan as of the measurement date. The mortality tables were then adjusted to future years using generational projection under Scale AA to reflect future mortality improvements.	

Termination Rates before Retirement:

Age	Groups 1 and 2 - Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.03	0.02	0.01
25	0.04	0.02	0.02
30	0.04	0.03	0.03
35	0.08	0.05	0.06
40	0.11	0.07	0.10
45	0.15	0.11	0.15
50	0.21	0.17	0.19
55	0.30	0.25	0.24
60	0.49	0.39	0.28

Notes: Mortality rates do not reflect generational projection.
70% of the disability rates shown represent accidental disability (previously, 60%).
20% of the accidental disabilities will die from the same cause as the disability.
70% of the death rates shown represent accidental death (previously, 20%).

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Age	Group 4 - Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.03	0.02	0.10
25	0.04	0.02	0.20
30	0.04	0.03	0.30
35	0.08	0.05	0.30
40	0.11	0.07	0.30
45	0.15	0.11	1.00
50	0.21	0.17	1.25
55	0.30	0.25	1.20
60	0.49	0.39	0.85

Notes: Mortality rates do not reflect generational projection.

90% of the disability rates shown represent accidental disability.

60% of the accidental disabilities will die from the same cause as the disability.

90% of the death rates shown represent accidental death (previously, 20%).

Withdrawal Rates:

Rate per year (%)			
Years of Service	Groups 1 and 2	Years of Service	Group 4
0	15.0	0 – 10	1.5
1	12.0	11+	0.0
2	10.0		
3	9.0		
4	8.0		
5	7.6		
6	7.5		
7	6.7		
8	6.3		
9	5.9		
10	5.4		
11	5.0		
12	4.6		

SECTION 4: Reporting Information for the Newton Contributory Retirement System

		Rate per year (%)		
	Years of Service	Groups 1 and 2	Years of Service	Group 4
	13	4.1		
	14	3.7		
	15	3.3		
	16 – 20	2.0		
	21 – 29	1.0		
	30+	0.0		

Retirement Rates:

Age	Rate per year (%)		
	Groups 1 and 2		Group 4
	Male	Female	
45 – 49	--	--	1.0
50 – 51	1.0	1.5	2.0
52	1.0	2.0	2.0
53	1.0	2.5	5.0
54	2.0	2.5	7.5
55	2.0	5.5	15.0
56 – 57	2.5	6.5	10.0
58	5.0	6.5	10.0
59	6.5	6.5	15.0
60	12.0	5.0	20.0
61	20.0	13.0	20.0
62	30.0	15.0	25.0
63	25.0	12.5	25.0
64	22.0	18.0	30.0
65	40.0	15.0	100.0
66 – 67	25.0	20.0	--
68	30.0	25.0	--
69	30.0	20.0	--
70	100.0	100.0	--

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Retirement Age for Inactive Vested Participants:	55 for participants hired prior to April 2, 2012. For participants hired April 2, 2012 or later, 60 for Group 1, 55 for Group 2, and 50 for Group 4.
Unknown Data for Participants:	Same as those exhibited by participants with similar known characteristics.
Family Composition:	80% of participants are assumed to be married. None are assumed to have dependent children. (Previously, loads of 2% and 11.7% were added to the accidental disability liability for Group 1 and Group 4, respectively, to account for benefits payable to dependent children upon the member's disability.) Females are assumed to be three years younger than their spouses.
Benefit Election:	All participants are assumed to elect Option A.
Net Investment Return:	7.65% (previously, 7.75%)
Salary Increases:	3.0% for 2014 and 3.5% for 2015 and later years.
Interest on Employee Contributions:	3.5%
Administrative Expenses:	This valuation does not include an administrative expense assumption because the City appropriates a specific amount for administrative expenses in addition to the recommended contribution.
Total Service:	Total creditable service reported in the data.
2013 Salary:	2013 salaries are equal to salaries provided in the data, annualized for new hires.
Net 3(8)(c) Liability:	No liability is valued for benefits paid to or received from other municipal retirement systems.
Actuarial Value of Assets:	A preliminary actuarial value is first determined by taking the actuarial value of assets at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments). Twenty-five percent of the difference between the market value of assets as reported in the System's Annual Statement and the preliminary actuarial value of assets is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Actuarial Cost Method:

Entry Age Normal Actuarial Cost Method. Entry Age is the attained age of the participant minus total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary. Normal Cost is determined using the plan of benefits applicable to each participant.

Changes in Assumptions:

This valuation reflects the following changes in actuarial assumptions:

- The investment return assumption was decreased from 7.75% to 7.65%.
- The pre-retirement mortality assumption was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA.
- The mortality assumption for disabled participants was changed from the RP-2000 Mortality Table set forward three years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally using Scale AA.
- The assumed percentage of deaths that are accidental was increased from 20% for all participants to 70% for Groups 1 and 2 and 90% for Group 4.
- The assumed percentage of disabilities that are accidental was increased from 60% to 70% for Groups 1 and 2.
- In the prior valuation, loads of 2% and 11.7% were added to the accidental disability liability for Group 1 and Group 4, respectively, to account for benefits payable to dependent children upon the member's disability. For this valuation, participants are assumed to have no dependent children.
- The percentage of accidental disability retirees who are assumed to die from the same cause as their disability is 20% for Group 1 and 2 employees and 60% for Group 4 employees.
- The liability for inactive vested participants is the greater of the employee's annuity savings fund or the present value of a deferred annuity.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT VII

Summary of Plan Provisions

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

Plan Year: January 1 through December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Percent	Age Last Birthday at Date of Retirement		
	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

SECTION 4: Reporting Information for the Newton Contributory Retirement System

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

For employees hired on April 2, 2012 or later, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following tables based on the age and years of creditable service of the member at retirement:

For members with less than 30 years of creditable service:

Age Last Birthday at Date of Retirement

Percent	Group 1	Group 2	Group 4
2.50	67 or over	62 or over	57 or over
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

For members with 30 years of creditable service or greater:

Age Last Birthday at Date of Retirement

Percent	Group 1	Group 2	Group 4
2.500	67 or over	62 or over	57 or over
2.375	66	61	56
2.250	65	60	55
2.125	64	59	54
2.000	63	58	53
1.875	62	57	52
1.750	61	56	51
1.625	60	55	50

SECTION 4: Reporting Information for the Newton Contributory Retirement System

A member's final five-year average salary is defined as the greater of the highest consecutive five-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last five years of creditable service prior to retirement.

For employees who became members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. 401(a)(17). In addition, regular compensation for members who retire after April 2, 2012 will be limited to prohibit "spiking" of a member's salary to increase the retirement benefit.

For all employees, the maximum annual amount of the retirement allowance is 80 percent of the member's final average salary. Any member who is a veteran also receives an additional yearly retirement allowance of \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

<u>Date of Hire</u>	<u>Contribution Rate</u>
Prior to January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 onward	9%

In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who voluntarily withdraw their contributions with less than 10 ten years of credited service receive 3% interest on their contributions.

Employees in Group 1 hired on or after April 2, 2012 with 30 years of creditable service or greater will pay a base contribution rate of 6%.

Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 hired prior to April 2, 2012 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Members hired prior to April 2, 2012 who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System).

Members of Group 1 hired April 2, 2012 or later may retire upon the attainment of age 60. Members of Group 2 or 4 hired April 2, 2012 or later may retire upon the attainment of age 55. Members of Group 4 may retire upon attainment of age 50 with ten years of creditable service.

Members hired April 2, 2012 or later who terminate before age 55 (60 for members of Group 1) with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (60 for members of Group 1) provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System.

Ordinary Disability Benefits

A member who is unable to perform his or her job due to a non-occupational disability will receive a retirement allowance if he or she has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55 (age 60 for Group 1 members hired on or after April 2, 2012), based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his or her own contributions.

Accidental Disability Benefit

For a job-connected disability, the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his or her own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C. The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$250 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay, in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

Upon the death of a job-connected disability retiree who retired prior to November 7, 1996 and could not elect an Option C benefit, a surviving spouse will receive an allowance of \$9,000 if the member dies for a reason unrelated to cause of disability.

"Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman, permanent member of a police department, or certain employees of a county correctional facility is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at the time of death any contributions not expended for annuity payments will be refunded to the beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing a survivor with two-thirds of the lesser amount. Option C pensioners will have benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

Post-Retirement Benefits

The Board has adopted the provisions of Section 51 of Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.

Changes in Plan Provisions

None.

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Newton Contributory Retirement System at December 31, 2013 were as follows:

Total pension liability	\$551,136,472
Plan fiduciary net position	280,345,810
System's net pension liability	270,790,662
Plan fiduciary net position as a percentage of the total pension liability	50.87%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2013, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.0% for 2014 and 2.5% for 2015 and later years
Salary increases	3.0% for 2014 and 3.5% for 2015 and later years
Investment rate of return	7.65%, net of pension plan investment expense, including inflation
Cost of Living Adjustment	3% of first \$12,000
Pre-Retirement:	RP-2000 Employee Mortality Table projected generationally with Scale AA
Healthy Retiree:	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale AA
Disabled Retiree:	RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally with Scale AA

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2013 are summarized in the following table:

SECTION 5: GASB Information for the Newton Contributory Retirement System

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	6.60%
International developed markets equity	7.10%
International emerging markets equity	9.40%
Core fixed income	2.20%
High-yield fixed income	4.70%
Real estate	4.40%
Commodities	4.40%
Hedge fund, GTAA, Risk parity	3.90%
Private equity	11.70%
Cash	1.80%

Discount rate: The discount rate used to measure the total pension liability was 7.65%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.65%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.65%) or 1-percentage-point higher (8.65%) than the current rate:

	1% Decrease (6.65%)	Current Discount (7.65%)	1% Increase (8.65%)
Newton Contributory Retirement System's net pension liability as of December 31, 2013	\$328,317,454	\$270,790,662	\$221,854,744

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 2

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pensions

A. Pension expense for the year ended June 30, 2015

Service cost	\$10,445,973
Interest	--
Recognized portion of current-period difference between expected and actual experience	--
Contributions – employee	--
Projected earnings on pension plan investments	--
Recognized portion of current-period difference between projected and actual earnings on pension plan investments	--
Recognition of deferred outflows of resources	--
Recognition of deferred inflows of resources	--
Pension expense for fiscal year ended June 30, 2015	To be determined

B. Deferred outflows/inflows of resources related to pensions

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	--	--
Changes of assumptions	--	--
Changes of benefit terms	--	--
Net difference between projected and actual earnings on pension plan investments	--	--
Total	To be determined	To be determined

C. Projected recognition of deferred outflows/(inflows)

	Year Ended June 30,	Recognition
	2016	--
	2017	--
	2018	--
	2019	--
	2020	--
	Thereafter	--

Note: Entry Age Normal liabilities calculated using ages and service amounts as of January 1, 2014 are used to measure the pension expense for fiscal year ended June 30, 2015.

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 3

Schedule of Changes in the Net Pension Liability – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Total pension liability										
Service cost	\$10,445,973									
Interest	--									
Differences between expected and actual experience	--									
Changes of assumptions	--									
Changes of benefit terms	--									
Benefit payments, including refunds of employee contributions	--									
Net change in total pension liability	TBD									
Total pension liability - beginning	\$551,136,472									
Total pension liability - ending (a)	<u>\$TBD</u>									
Plan fiduciary net position										
Contributions - employer	--									
Contributions - employee	--									
Net investment income	--									
Benefit payments, including refunds of employee contributions	--									
Other	--									
Net change in fiduciary net position	TBD									
Plan fiduciary net position - beginning	\$280,345,810									
Plan fiduciary net position - ending (b)	TBD									
Net pension liability – ending: (a)-(b)	<u>TBD</u>									
Plan's fiduciary net position as a percentage of the total pension liability	TBD									
Covered-employee payroll	\$86,807,549*									
Net pension liability as a percentage of covered-employee payroll	TBD									

*Covered-employee payroll as reported in the January 1, 2014 funding valuation report

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 4

Schedule of Contributions – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Actuarially determined contribution*	\$19,972,859									
Contributions in relation to the actuarially determined contribution	TBD									
Contribution deficiency (excess)	TBD									
Covered-employee payroll	\$86,807,549									
Contributions as a percentage of covered-employee payroll	23.01%									

(Historical information prior to implementation of GASB 67/68 is not required)

* Based on the results of the January 1, 2013 actuarial valuation (including assumptions and methods) which determined budgeted appropriation for fiscal 2015.

SECTION 5: GASB Information for the Error! Bookmark not defined.

EXHIBIT 5

Notes to Required Supplementary Information

Valuation date	Actuarial determined contributions are calculated as of January 1 two years prior to the end of the employer's fiscal year in which contributions are reported
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Total payments increase at 8.5% per year
Remaining amortization period	15 years from July 1, 2014
Asset valuation method	Sum of actuarial value at beginning of the year, contributions and investment earnings based on the actuarial interest assumption less benefit payments plus 25% of the market value at the end of the year in excess of that sum, plus additional adjustment toward market value as necessary so that final actuarial value is within 20% of market value.
Actuarial assumptions:	
Investment rate of return	7.65% (previously, 7.75%)
Discount rate	7.65% (previously, 7.75%)
Inflation rate	2.0% for 2014 and 2.5% for 2015 and later years
Projected salary increases	3.0% for 2014 and 3.5% for 2014 and later years.
Cost of living adjustments	3% of first \$12,000
Plan membership:	
Retired participants and beneficiaries receiving benefits	1,327
Inactive participants entitled to a return of their employee contributions	514
Inactive participants with a vested right to a deferred or immediate benefit	28
Active participants	<u>1,666</u>
Total	3,535

SECTION 5: GASB Information for the Error! Bookmark not defined.

Changes in Assumptions:

The investment return assumption was decreased from 7.75% to 7.65%.

The pre-retirement mortality assumption was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA.

The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA.

The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally using Scale AA.

The assumed percentage of deaths that are accidental was increased from 20% for all participants to 70% for Groups 1 and 2 and 90% for Group 4.

The assumed percentage of disabilities that are accidental was increased from 60% to 70% for Groups 1 and 2.

In the prior valuation, loads of 2% and 11.7% were added to the accidental disability liability for Group 1 and Group 4, respectively, to account for benefits payable to dependent children upon the member's disability. For this valuation, participants are assumed to have no dependent children.

The percentage of accidental disability retirees who are assumed to die from the same cause as their disability is 20% for Group 1 and 2 employees and 60% for Group 4 employees.

The liability for inactive vested participants is the greater of the employee's annuity savings fund or the present value of a deferred annuity.

Changes in Plan Provisions:

None